CLAIMS

1. A multiple-layer structure for fabricating a flexible container or a tank liner or the like comprising:

a first layer of selected from the group consisting of polyesters and polyamides;

a second layer attached to the first layer, the second layer of an ethylene and α-olefin copolymer having a density of less than about 0.900 g/cc ; and

wherein the structure has a modulus of elasticity of less than about 60,000 psi.

2. The structure of claim 1, wherein the polyester is a polyester ether.

3. The structure of claim 2, wherein the polyester ether is obtained from reacting 1,4 cyclohexane dimethanol, 1,4 cyclohexane dicarboxylic acid and polytetramethylene glycol ether.

4. The structure of claim 1, wherein the polyamide results from a ring-opening reaction of lactams having from 4-12 carbons.

5. The structure of claim 1, wherein the polyamide is selected from the group consisting of nylon 6, nylon 10 and nylon 12.

6. The structure of claim 1, wherein the polyamide is selected from the group consisting of aliphatic polyamides resulting from the condensation reaction of di-amines having a carbon number within a range of 2-13, aliphatic polyamides resulting from a condensation reaction of di-acids having a carbon number within a range of 2-13, polyamides resulting from the condensation reaction of dimer fatty acids, and amide containing copolymers.

7. The structure of claim 1, wherein the polyamide is selected from the group consisting of nylon 66, nylon 6,10 and dimer fatty acid polyamides.

8. The structure of claim 1, wherein the α-olefin has from 4 to 8 carbons.

9. The structure of claim 8, wherein the ethylene and α-olefin copolymer is produced using a single-site catalyst.

10. The structure of claim 8, further comprising a tie layer positioned between the first layer and the second layer.

11. The structure of claim 10, wherein the tie layer is a polyolefin polymer or copolymer blended with a polyethylene copolymer grafted with a carboxylic acid anhydride or a carboxylic acid.

12. The structure of claim 11, wherein the carboxylic acid anhydride is an unsaturated fused ring carboxylic acid anhydride.

13. The structure of claim 12, wherein the carboxylic acid anhydride is a maleic anhydride.

14. The structure of claim 10, wherein the first layer is from about 0.5 mils to about 4.0 mils thick, the second layer is from about 4.0 to about 10.0 thick, and the tie layer is from about 0.2 mils to about 1.2 mils thick.

15. The structure of claim 14, wherein the structure is fabricated by a coextrusion process.

16. The structure of claim 15, wherein the coextrusion process is a cast coextrusion process.

17. The structure of claim 16, wherein the cast coextrusion process is carried out essentially free of slip agents.

18. A multiple-layer structure for fabricating a flexible container or a tank liner or the like comprising:

a first layer of a PCCE having a thickness from about 0.5 mils to about mils 4.0 mils;

a second layer attached to the first layer, the second layer of an ethylene and α-olefin copolymer having a density of less than about 0.900 g/cc, the second layer having a thickness from about 4.0 mils to about 12.0 mils ; and

wherein the structure has a modulus of elasticity of less than about 60,000 psi.

19. The structure of claim 18 wherein the α-olefin has from 4 to 8 carbons.

20. The structure of claim 19, wherein the ethylene and α-olefin copolymer is produced using a single-site catalyst.

21. The structure of claim 20, further comprising a tie layer positioned between the first layer and the second layer.

22. The structure of claim 21, wherein the tie layer is a polyolefin polymer or copolymer blended with a polyethylene copolymer grafted with a carboxylic acid anhydride or a carboxylic acid.

23. The structure of claim 22, wherein the carboxylic acid anhydride is an unsaturated fused ring carboxylic acid anhydride.

24. The structure of claim 23, wherein the carboxylic acid anhydride is a maleic anhydride.

25. The structure of claim 21, wherein the first layer is from about 0.5 mils to about 2.0 mils thick, the second layer is from about 6.0 mils to about 10.0 mils thick, and the tie layer is from about 0.2 mils to about 2.0 mils thick.

26. The structure of claim 21, wherein the structure is fabricated by a coextrusion process.

27. The structure of claim 26, wherein the coextrusion process is a cast coextrusion process.

28. The structure of claim 27, wherein the cast coextrusion process is carried out essentially free of slip agents.

29. A multiple-layer structure for fabricating medical products comprising:

a first layer of a PCCE having a thickness from about 0.5 mils to about 4.0 mils;

a second layer of an ethylene and α-olefin copolymer having a density of less than about 0.900 g/cc, the second layer having a thickness from about 4.0 mils to about 12.0 mils;

a tie layer positioned between the first layer and the second layer and connected thereto, the tie layer having a thickness from about 0.5 mils to about 2.0 mils; and

wherein the structure has a modulus of elasticity of less than about 60,000 psi.

30. The structure of claim 29, wherein the α-olefin has from 4 to 8 carbons.

31. The structure of claim 30, wherein the ethylene and α-olefin copolymer is produced using a single-site catalyst.

32. The structure of claim 31, wherein the tie layer is a polyolefin polymer or copolymer blended with a polyethylene copolymer grafted with a carboxylic acid anhydride or a carboxylic acid.

33. The structure of claim 32, wherein the carboxylic acid anhydride is an unsaturated fused ring carboxylic acid anhydride.

34. The structure of claim 33, wherein the carboxylic acid anhydride is a maleic anhydride.

35. The structure of claim 32, wherein the first layer is from about 0.5 mils to about 2.0 mils thick, the second layer is from about 6.0 mils to about 10.0 mils thick, and the tie layer is from about 0.2 mils to about 1.0 mil thick.

36. The structure of claim 32, wherein the structure is fabricated by a coextrusion process.

37. The structure of claim 36, wherein the coextrusion process is a cast coextrusion process.

38. The structure of claim 37, wherein the cast coextrusion process is carried out essentially free of slip agents.

39. A method for fabricating a multilayered structure comprising the steps of:

providing a PCCE material;

providing an ethylene and α-olefin copolymer having a density of less than about 0.900 g/cc;

providing a tie material;

coextruding the PCCE material, the ethylene and α-olefin copolymer and the tie layer to define a multilayered structure having a first layer of PCCE, a second layer of ethylene and α-olefin copolymer and a tie layer attaching the first layer to the second layer ; and

wherein the step of coextruding is carried essentially free of slip agents.

40. The method of claim 39, wherein the α-olefin has from 4 to 8 carbons.

41. The method of claim 40, wherein the ethylene and α-olefin copolymer is produced using a single-site catalyst.

42. The method of claim 41, wherein the tie material is a polyolefin polymer or copolymer blended with a polyethylene copolymer grafted with a carboxylic acid anhydride or a carboxylic acid.

43. The method of claim 42, wherein the carboxylic acid anhydride is an unsaturated fused ring carboxylic acid anhydride.

44. The method of claim 43, wherein the carboxylic acid anhydride is a maleic anhydride.

45. The method of claim 42, wherein the first layer is from about 0.5 mils to about 4.0 mils thick, the second layer is from about 4.0 mils to about 12.0 thick, and the tie layer is from about 0.2 mils to about 2.0 mils thick.

46. A multiple-layer structure for fabricating medical products comprising:

a first layer of a polyamide having a thickness from about 0.5 mils to about mils 4.0 mils;

a second layer attached to the first layer, the second layer of an ethylene and α-olefin copolymer having a density of less than about 0.900 g/cc, the second layer having a thickness from about 4.0 mils to about 12.0 mils ; and

wherein the structure has a modulus of elasticity of less than about 60,000 psi.

47. The structure of claim 46, wherein the α-olefin has from 4 to 8 carbons.

48. The structure of claim 47, wherein the ethylene and α-olefin copolymer is produced using a single-site catalyst.

49. The structure of claim 46, further comprising a tie layer positioned between the first layer and the second layer.

50. The structure of claim 49, wherein the tie layer is a polyolefin polymer or copolymer blended with a polyethylene copolymer grafted with a carboxylic acid anhydride or a carboxylic acid.

51. The structure of claim 50, wherein the carboxylic acid anhydride is an unsaturated fused ring carboxylic acid anhydride.

52. The structure of claim 51, wherein the carboxylic acid anhydride is a maleic anhydride.

53. The structure of claim 49, wherein the first layer is from about 0.5 mils to about 2.0 mils thick, the second layer is from about 6.0 mils to about 10.0 mils thick, and the tie layer is from about 0.2 mils to about 2.0 mils thick.

54. The structure of claim 49, wherein the structure is fabricated by a coextrusion process.

55. The structure of claim 54, wherein the coextrusion process is a cast coextrusion process.

56. The structure of claim 55, wherein the cast coextrusion process is carried out essentially free of slip agents.

57. The structure of claim 46, wherein the polyamide results from a ring-opening reaction of lactams having from 4-12 carbons.

58. The structure of claim 46, wherein the polyamide is selected from the group consisting of nylon 6, nylon 10 and nylon 12.

59. The structure of claim 46, wherein the polyamide is selected from the group consisting of aliphatic polyamides resulting from the condensation reaction of di-amines having a carbon number within a range of 2-13, aliphatic polyamides resulting

from a condensation reaction of di-acids having a carbon number within a range of 2-13, polyamides resulting from the condensation reaction of dimer fatty acids, and amide containing copolymers.

60. The structure of claim 46, wherein the polyamide is selected from the group consisting of nylon 66, nylon 6,10 and dimer fatty acid polyamides.